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ABSTRACT

This chapter reframes, from a developmental, self-worth perspective, the longstanding debate over the presumed negative impact of extrinsic rewards on subject-matter appreciation and creative expression. The chapter argues that the debate over the potentially adverse effects of extrinsic payoffs is largely misplaced because of a narrow, almost exclusive focus on the tangible attributes of rewards as the cause of their adverse effect. The proper concern in the debate on the effects of rewards should be more with their meaning as a measure of self-definition rather than their tangible attributes and with their withdrawal as a means of control rather than the offering of rewards. To promote a developmental perspective to the question, the chapter uses data from Berkeley college students' recollections of forces influencing their willingness to learn for its own sake throughout their education. These data showed that students' personal interest and curiosity in learning increased incrementally from elementary to high school, with a slight dip in middle school, and dropped precipitously after college entry. The possibility that competition for scarce valued rewards is the major cause of intrinsic disengagement is discussed, drawing on findings from the Berkeley student study and other research. Possible contributors to task engagement were identified as task success, personal meaning of the task, and task-focused reasons for engagement rather than self-aggrandizement or self-protection. The chapter concludes by asserting that when properly employed by educators, tangible reinforcers can encourage adolescents' intrinsically-oriented goals. (Contains 41 references.) (KB)

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CHAPTER 6

REWARDS AND INTRINSIC MOTIVATION

A Needs-Based, Developmental Perspective

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Consider the following parable of an old gentleman (probably a retired psychology professor) who was bothered by the noisy play of boys in his neighborhood (Casady, 1974, as reported in Covington & Beery, 1976):

> How could he get the boys to stop? The old man called the boys together, told them he was quite deaf, and asked that they shout louder so that he might enjoy their fun. In return, he was willing to pay each of them a quarter. Needless to say, the boys were delighted to combine business with pleasure, and on that first day the old man got more than his money's worth. On the second day he told the boys that owing to his small pension, he could afford to pay only twenty cents. As the pay rate dwindled day by day, the boys became angry and finally told the old man they would not return. The sly old gentleman had turned play into work and then paid so little that making noise for five cents was not worth the effort. (pp. 24–25)

The point of this fable, a warning of sorts, is that paying people for what they might otherwise do freely can transform play into drudgery, and further that work that is undercompensated is likely not worth the effort. This parable appears to have stood the test of time. It has been so widely accepted for so long that the principle it espouses has attained the status of

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an "illuminated" truth. Indeed, this author has often drawn on this fable to bolster the proposition that tangible rewards adversely affect intrinsic interest and subject-matter appreciation (e.g., Covington, 1992). Other observers have also been quick to accept this negative verdict regarding the effects of tangible rewards on intrinsic engagement, a principle commonly referred to in a matter-of-fact way in many introductory psychology textbooks (for a commentary, see Pittenger, 1996).

Explanations for the allegedly negative influence of tangible rewards take several forms. One view focuses on the extrinsic nature of many rewards as the culprit—extrinsic because such payoffs as social recognition and monetary prizes are typically unrelated to the act of learning itself, and thus are likely to draw attention away from the inherent benefits of learning. As a result it is feared that learning may merely become a way to get rewards, and when these rewards are no longer available, the willingness to continue learning will decline (Condry & Chambers, 1978).

Another view proposed by Edward Deci and Richard Ryan (1985) focuses on the subjective meaning of extrinsic rewards regarding the individual's feelings of self-determination. This self-determination theory suggests that being offered rewards for one's actions may create the experience of being controlled by others, thereby diminishing feelings of freedom, autonomy, and competency, which, in turn, it is thought, lead to a reduction in task interest and creativity.

Yet a third perspective, self-perception theory (Bem, 1970), suggests that receiving extraneous, unnecessary rewards for performing an already personally satisfying activity may cause individuals to discount the value of their actions, reasoning that "if I have to be paid to do this, then it must not be worthwhile doing for its own sake alone." The parable of the deaf professor speaks most directly to this interpretation.

Although some researchers continue to search for the mechanisms responsible for this deterioration in task engagement, others have questioned, more fundamentally, first, whether there is, in fact, any deterioration at all; and second, assuming that there is, if the deterioration is the result of other processes unrelated to the nature of rewards. As many readers are well aware, this debate has generated a heated controversy in recent years. But, whatever the final verdict, it seems clear that using tangible rewards as a motivational tool is an uncertain, even risky, business. The potential dangers take a number of forms. For example, the offering of tangible rewards as inducements to achievement produces students who are less persistent in their studies (Fincham & Cain, 1986), less adaptive in their problem-solving efforts (Amabile, 1982), and more likely to choose easier assignments. Moreover, students who are compensated with tangible payoffs are less likely to remember what they learned (Grolnick & Ryan,

1986) and appear less willing to redouble their problem-solving efforts once rewards are removed.

The larger, decidedly ominous significance of these findings taken as a whole implies a potential threat aimed at the very heart of the educational mission, that is, the encouragement of a love of learning among our youth now and for a lifetime. A vast array of tangible rewards and incentives dominate classroom life in part because of the uncritical acceptance by educators and the lay public alike of the notion that the offering and withholding of rewards produce good results—better, in fact, than any other teaching strategy, including punishing students for not trying, reasoning with students, or just simply not interfering. Underlying this assumption regarding the motivational benefits of rewards is the notion that the greater the reward, the more eagerly students will compete. These beliefs are often accompanied by the further expectation that exposing students to the rigors of competition by means of scarce rewards prepares them for future economic survival in later life as well as the building of character via adversity (for a critique, see Covington, 1992, 1998; Kohn, 1993).

Many observers have despaired of the prospects of encouraging intrinsic values in a world controlled by such an overweening network of tangible, extrinsic rewards. Indeed, given these circumstances, one may ask what is to become of the value of learning for its own sake? Is caring about learning marginalized?

The purpose of this chapter is to revisit the long-standing question of whether intrinsic objectives such as subject-matter appreciation and intrinsic involvement can coexist, let alone thrive, in the face of massive, unrelenting extrinsic payoffs—praise, gold stars, and grades, whose main function is seen by educators as an enabling factor—to provide the right rewards and enough of them, or threaten sufficient penalties by withholding them, to arouse (drive) students to higher levels of achievement.

I will argue that the debate over the potentially adverse effects of extrinsic payoffs is largely misplaced, owing to a narrow, almost exclusive focus on the *tangible* attributes of rewards as the culprit. Actually, I believe the issues surrounding the offering of rewards and the motives and actions they arouse are far broader than this. For example, as I will propose, the proper concern regarding the effects of rewards is less their tangible nature and more their *meaning* as a measure of self-definition; and less the offering of rewards per se, and more a matter of their being withdrawn or withheld as a means of control. To anticipate this latter point, the withholding from students of otherwise well-deserved rewards simply because of their competitive scarcity amounts to a punishment, psychologically speaking (Kohn, 1993). The feelings of self-loathing, anger, and the fears of incompetence that follow such punishments can be devastating to the will to learn, far more so, it can be argued, than whether or not the rewards in

question are merely tangible and thereby extrinsic to the process of learning. The debate over rewards needs to be reconsidered in light of the broader perspectives suggested by these examples.

What, then, is my approach? First, I believe we need to adopt a developmental view of the relationship between rewards and intrinsic motivation—a perspective essentially absent from the debate thus far, because the processes involved in this relationship mature and change over the life course. More specifically, I will maintain that the disposition for being intrinsically motivated evolves out of the progressive satisfaction of various positive psychological needs, which themselves have a developmental history of growth and expression. As only one example, we can cite the need to establish and maintain feelings of personal competence (Deci & Ryan, 1985). Likewise, certain negative forces arrayed against the expression of intrinsic engagement, especially self-defeating dynamics linked to competitive reward structures, also chart a developmental course—in this instance, unfortunately, increasing in strength and vitality as children move through the educational system (Harari & Covington, 1981).

I believe that it is at the confluence of these collective, developmentally conditioned factors—some negative and others positive—that the debate over the effects of rewards needs to be situated. In order to promote this developmental perspective, I will draw on the accounts of college students regarding their personal recollections of those forces that influenced their willingness to learn for its own sake as they moved from one level of schooling to another. In this particular study (Covington & Dray, 2002), the recollections of some 400 Berkeley undergraduates were prompted by an extensive set of Likert-type self-report scales. One series of scales reflected the degree to which the basic developmental needs featured in self-determination theory were thought to be satisfied: *relatedness* needs, both those associated with teachers (e.g., "How much did you feel you could turn to teachers for help?") and with other students (e.g., "How much did you feel left out by your classmates?"); *autonomy* needs (e.g., "How much did teachers trust you to make decisions on your own?"); and feelings of *competency* (e.g., "How much did you worry that you were not smart enough to keep up?"). As part of this self-report protocol, students also rated the degree of competitive pressure they experienced as well as judged the saliency of several different motives (or reasons) for learning, including striving in order to avoid failure, to stay out of trouble, and to prove one's worth. The dependent variables of interest were self-ratings of various intrinsic aspects of the process of knowledge acquisition (e.g., "How much did you enjoy learning, apart from any grade?"). Our informants rated this panel of some 200 questions four separate times, initially regarding their memories of the elementary years, next reminiscing about the middle school years, then the high school years, and finally regarding their experiences during the first

year of college. Following the completion of these ratings, participants were randomly assigned to smaller subgroups to explain their ratings on each of several individual items in the form of brief essays.

Let me add one important point regarding the appropriateness of this highly selected college sample to our inquiry. The very fact of the extraordinary scholastic and school achievements of these individuals—a near-majority were, for instance, either high school valedictorians or class officers—would appear to put them uniquely at risk regarding the issues under consideration here, and therefore especially valuable to our analyses. Specifically, I wondered if any value these youngsters had originally placed on learning for its own sake had become so compromised by the extrinsic trappings of their accumulated successes that their capacity for intrinsic enjoyment had long ago been compromised.

Interestingly enough, this was not the case. To anticipate briefly, our data told a far different and more complex story. First, rather than a progressive deterioration in the valuing of learning, our informants indicated that much of what they had learned over the years was inspired by personal interest and curiosity, and was not simply a by-product of the pursuit of grades for the sake of self-aggrandizement. Second, this positive valuing grew incrementally, as far as memory served, from the earliest years of schooling to a maximum in the high school years, with only a temporary dip during the middle school years. At the same time, however, as our students entered college, they recorded a precipitous drop in the frequency with which they experienced feelings of intrinsic task engagement. Overall, this was a sufficiently curious pattern to prompt a closer look.

What, then, permitted these youngsters to experience progressive increases in their enjoyment of learning during their formative years, despite an increasing presence of tangible payoffs, notariety, and recognition? It appeared that there might be "life beyond grades" after all. But what of the decline in levels of intrinsic involvement upon their entry into college? Had the potentially negative features of tangible rewards, most notably grades, become exacerbated due to some unique characteristics of the college experience? Whatever the answers, given these tantalizing findings, it seems reasonable to consider the possibility that the potential undermining effects of tangible rewards on intrinsic task engagement are neither universal nor inevitable and might under some circumstances even be positive.

To put this observation in the allegorical context with which we began, I question whether the fable of the deaf professor is the only, or even the best, way to frame the issues concerning the relationship between extrinsic rewards and intrinsic motivation. One problem is that this fable is not provocative of potentially positive uses of rewards when it comes to encouraging the enjoyment of learning. For example, what if the old man's purpose

had been to encourage the boys to enjoy their game play? How would he have used his limited financial resources to this end? I gave this challenge to a number of my Berkeley undergraduates. The outpouring of suggestions was variously funny, sometimes outright hilarious, typically impish yet sometimes stimulating of serious thought. Although there are few operating counterparts of these ingenious ideas in the real world of schooling today, some of them are provocative of experimentation. I consider the implications of these proposals in closing.

THE CONTROVERSY

Before proceeding, it is important to place the current controversy in perspective, the disputed proposition being that the offering of tangible rewards and incentives undercuts intrinsic task engagement. What more precisely are the issues at hand, and equally important, what are *not* the issues? To begin, the issue is not that offering tangible rewards will necessarily interfere with learning. Sometimes rewards clearly do interfere, as amply demonstrated by the evidence cited earlier. Other times, however, the offering of rewards are known to increase student learning, particularly when the tasks are boring, repetitive, or of little personal interest (e.g., DeCharms, 1957; Shaw, 1958). Nor is the issue that rewards necessarily inhibit the generation of creative ideas. To the contrary, it has long been known that if individuals are instructed in how to produce creative ideas as contrasted to mundane ones, and are then rewarded tangibly for doing so, they will readily increase the quality of their ideational output (Maltzman, 1960). Quite apart from the matter of encouraging the production of unusual ideas on demand, however, the nub of the question before us is whether or not tangible, extrinsic rewards create negative, counterproductive reasons for performing so that the act of learning is robbed of any inherent value to the individual.

A Brief History

One of the earliest studies to implicate the offering of extrinsic rewards as detrimental to the enjoyment of an activity was conducted by Lepper, Greene, and Nisbett (1973). Preschool children were asked by these investigators to draw pictures. Some of the youngsters were promised a reward, a good citizen award, for complying, while a second group received the same award but only unexpectedly at the end of the drawing session. A third control group received no rewards for their drawings. During a subsequent free-play session, children in the unexpected reward and control

conditions spontaneously devoted more time to drawing pictures than they had spent doing so in the initial session, while those students in the expected reward condition spent less time drawing during free play than they had previously. These results were interpreted as evidence favoring an overjustification hypothesis, that is, performing a creative action initially justified in its own right, presumably because drawing is fun, was subsequently inhibited because of the addition of unnecessary inducements, hence overjustified.

A number of other studies inspired by self-determination theory soon followed (see Ryan & Deci, 2000, for a recent review). However, rather than invoking attributional arguments underlying the overjustification hypothesis, this body of research focused on capturing the meaning of offering rewards regarding feelings of self-determination, especially feelings of competency and autonomy. For example, Deci and his colleagues argued that rewards would interfere with creative expression to the extent that they were perceived by subjects as controlling, and conversely, to the extent that rewards provided competency information, they would encourage intrinsic task engagement. Such differential predictions regarding various reward contingencies added considerably to the sophistication with which the research proceeded. Moreover, in general, the evidence from a number of these studies favored self-determination predictions. When rewards were perceived by subjects as more controlling than empowering, various indices of task engagement plummeted, including the free-time activities of subjects as well as subjective self-reports of task enjoyment. Conversely, when the positive informational aspects of rewards predominated, their offering proved to be either neutral toward or supportive of intrinsic task engagement. These basic findings have been replicated and extended in various ways.

During these years of intense research, other investigators largely representing a behavioral tradition raised doubts about the interpretation of many of these findings, and in some cases questioned if a detrimental phenomenon associated with tangible rewards existed at all, and failing that possibility, whether decreases in joyful engagement were simply an artifact of the experimental design or the procedures employed. For example, some critics have argued that any undermining is likely only transitory, akin to temporary satiation (see Eisenberger & Cameron, 1996). In rebuttal, Deci, Koestner, and Ryan (1999) point to the results of several studies that employed delayed assessments, some of which occurred up to a week after the initial experimental manipulation. As a group, these studies tend to support the view that undermining effects on intrinsic motivation are more than transitory. However, as was readily acknowledged, these studies are few in number and are based primarily on children using only a free-choice assessment procedure. Behaviorists have also been sharply critical

of the fact that many of the studies employed only single sessions, whereas in real-world contexts, multiple sessions with the administration of successive rewards over time is the norm. Although it is true that appropriately designed multisession studies show little or no evidence of undermining, they are too few in number and focus on only a handful of subjects, thus rendering any generalizations premature. These two examples of critique and rebuttal illustrate how one's efforts to reach definitive conclusions in this area can be easily frustrated despite a volume of research that now approaches 150 studies.

Researchers have also sought to resolve the issue of the potential undermining effects of tangible rewards by aggregating the results of a number of studies. To date, five meta-analyses have been published (Cameron & Pierce, 1994; Deci, Koestner, & Ryan, 1999; Rummel & Feinberg, 1988; Tang & Hall, 1995; Wiersma, 1992) as well as a sixth, forthcoming analysis (Cameron, Banko, & Pierce, 2002). It is beyond the scope of this chapter to review these accumulated findings in detail. For our purposes, it is sufficient to say that the conclusions reached by successive investigators have not been consistent, and that far more than mere shades of interpretation linger. For example, based on a review of the previous literature, Cameron (2001) concludes that there is "no inherent negative property of reward. Rewards can be used to produce positive, negative, or no effects on measures of intrinsic motivation" (p. 41). By contrast, based on the most comprehensive published analysis to date, Deci and colleagues (1999) conclude "that tangible rewards tend to have a substantially negative effect on intrinsic motivation, with the limiting conditions we have specified. Even when tangible rewards are offered as indicators of good performance, they typically decrease intrinsic motivation for interesting activities" (p. 659).

Steps Toward Reconciliation

It is here that the debate rests at least for the moment. Can we move forward beyond this point? The danger is that controversy may have eclipsed other perspectives that could place the issues at hand on a more certain, constructive footing. I propose an alternative way of couching the issues, which seems simplicity itself. Rather than continuing to ask solely if the offering of tangible rewards inhibits intrinsic task engagement—it certainly seems that the potential is there—would we not be better advised also to enquire if there are any situations in which tangible rewards might actually serve to benefit the will to learn, and if so, how? In part, this shift in thinking requires that we ask not only why, according to various theories, the tangible nature of rewards is potentially harmful, but what might be done to offset these negative factors? For instance, following the thrust of Deci's work, we might won-

der in what ways tangible rewards could be offered to students without conveying the impression that they are being controlled or are under the surveillance of others.

Yet more is needed than merely reframing questions. We also need to shift the context in which we pursue these questions. Far too much current research is unhelpful, not merely by reason of being in dispute, but possibly being beside the point as well because it disregards the situated factors in which rewards and incentives operate in the real world of classrooms. In effect, there is reason to wonder if many of the findings inspired by laboratory-type paradigms, even if they had provoked no debate, could be generalized to actual classrooms. Although laboratory research has contributed immeasurably to our understanding of the issues discussed here, I believe we cannot truly understand how students come to appreciate and deeply hold the values of exploration and discovery unless the processes involved are also studied in the context of real-life schooling, where success and failure carry enormous public promise and penalties, respectively.

Much previous research has focused on only a narrow set of rewards and on tasks of questionable relevance. In the latter instance, all too often the tasks chosen for study are quite divorced from the practical realities of typical classroom assignments, rendering any results of suspect value when it comes to real-world applications. More on this point later. As to the matter of rewards, their selection for study has been spotty and uneven at best, the most significant consequence being that investigators have not sufficiently considered those rewards that are likely to benefit intrinsic task engagement, even after tangible support is withdrawn. One promising candidate is the use of *encouragement* whose message of guidance for the sake of improvement (e.g., "Here are some ways to do even better") is likely to enhance learner confidence as well as focus attention on the process of learning itself. Feedback regarding the quality of one's efforts and how to improve can act as a reward of sorts—an incentive to remain engaged and resilient in the face of any learning setbacks. And, interestingly, such feedback need not always be positive to be effective. For example, Butler and Nisan (1986) found that by providing feedback that described one aspect of a task that had been performed well and another aspect less well, students continued to express interest in the task and to improve their performance compared to other youngsters who received feedback simply to arouse effort level.

This observation suggests that the issues before us might best be resolved by situating our inquiries within the broader study of feedback mechanisms for which there is already a rich literature, rather than to continue focusing on oppositional distinctions such as extrinsic/intrinsic rewards, which may ultimately prove misleading and unhelpful (see Covington & Müeller, 2001).

While potentially positive sources of rewards beg for consideration, we have likewise neglected possibly the most corrosive and in any case certainly the most ubiquitous of all school incentives/rewards: grades. Yet if we are ever to understand fully the nature and nurturing of intrinsic task engagement, we need to explore what it is about grades and grading practices that present such an overarching threat to intrinsic task engagement. The work of Deci and his colleagues regarding feelings of being under surveillance and controlled by others as potentially negative components of rewards can clearly be applied profitably to the study of grades.

Adopting the naturalistic perspective of students and teachers not only authenticates the processes involved in the offering of rewards, but it also alerts us to the broader circle of threats to caring about learning of which the presence of tangible rewards is merely a part and, I would argue, of only marginal importance. As we will see, this latter perspective calls for a more fundamental reconsideration of the institutional aspects of schooling in America beyond simply questioning the wisdom of using extrinsic rewards to motivate students. Unless we consider a wider perspective than is presently being entertained, our efforts to discover fully satisfactory answers to the question of the impact of rewards on intrinsic task engagement are unlikely to be forthcoming.

RAPPROCHEMENT

The most encouraging note at present regarding the current controversy was sounded by Deci and colleagues (1999) when they concluded that focusing on need satisfaction offers important alternatives to extrinsic rewards and social control when it comes to encouraging intrinsic task engagement. I, too, believe that the facilitation of intrinsic motivation ultimately depends on the satisfaction of psychological needs. Indeed, this needs-satisfaction argument was largely the inspiration for our research on student memories of their prior school experiences. In this connection, the most important task facing us as investigators was to place these developmental recollections in a serviceable theoretical framework, which properly reflected the dynamics that produced these memories in the first place. In effect, the satisfaction of psychological needs must always be negotiated within a context of many competing forces, some supportive of need satisfaction, others detractive, and still others neutral regarding satisfaction, and yet forces that also change over time. How best to portray these dynamics and the conditions that influence them in a naturalistic context?

Our answer was based on two models of classroom achievement dynamics within whose real-world parameters need theory, on the one hand, and reward contingencies, on the other, could be properly situated. The first

model adopted Doyle's (1983) notion of academic work. Doyle proposed a functional linkage between the offering of school incentives and the motives for learning that are reinforced by those rewards. A second interlocking perspective was provided by self-worth theory (Beery, 1975; Covington, 1992, 1998; Covington & Beery, 1976), which details the self-preservation dynamics set in motion by the reward contingencies described by Doyle.

Doyle (1983) argues that every classroom embodies some kind of reward structure, which conveys to students, either implicitly or explicitly, how their work will be judged, the activities they must perform, and how well they must perform them if they hope to succeed. This "playbook" amounts to a set of rules by which the academic game is conducted, and in essence, how the quality and amount of work to be undertaken translate into sought-after rewards—usually tangible in nature, including praise, grades, and privileges.

Self-worth theory extends the need-based achievement theory pioneered by John Atkinson (1957) and David McClelland (1965, 1980) in the 1950s and 1960s. From the perspective of self-worth theory, the concept of need translates into a struggle for self-acceptance. In our society individuals are widely considered to be only as worthy as their ability to achieve competitively. As a result, many individuals equate their personal worth with their accomplishments, and because they perceive ability as a primary ingredient for success, especially competitively defined success, and inability a major cause of failure, then ability becomes critical to one's self-definition. This self-worth perspective transforms Doyle's achievement game into an ability game. The rules of this competitive ability game dictate that an inadequate supply of rewards (e.g., top grades) be distributed unequally with the greatest number going to the best, the quickest, or the most able performers. This arrangement amounts to a zero-sum scoring system. When one student (player) wins (or makes points), then other students must lose points. Thus success depends on one's academic ability because rewards are more available to the most able. Because the supply of good grades is limited, the majority of students must struggle to avoid failure in the form of poor or mediocre grades rather than to approach success. And, if students are unsuccessful in achieving their grade goals, especially when they interpret any disappointment as falling short as a person, then the fear of being judged incompetent by others can be devastating. Ability-linked anxiety narrows one's attention to matters of self-preservation, especially the creation of self-serving excuses to deflect the causes of poor performance away from insufficient ability (Thompson, 1993, 1996; Urdan, Midgley, & Anderman, 1998). Such a self-serving, defensive agenda bodes ill for the acquisition of knowledge, let alone for the valuing of learning for its own sake.

Putting this argument in developmental terms, Atkinson's (1957) distinction between approach and avoidant tendencies and their relative bal-

ance within individuals helps explain many of the changes our students reported in their capacity for intrinsic engagement as they moved from the early years of schooling through late adolescence. To the extent that the opportunities for rewards become limited, their availability carries information about the relative competency of students, and, as rewards become scarce, the starker these ability distinctions also become. Based on these emerging competency judgments, then, students tend to adopt either approach or avoidant learning goals that eventually crystallize into trait-like behaviors. The progressive decrease in self-perceived competency ratings over the years among our students suggests that the process of negotiating these goals favors the disproportionate emergence of an avoidant mentality even among this highly selected, intellectually promising group. This approach/avoidant analysis also reveals something about the nature of grades as rewards. The benefits of being successful, grade-wise, differs from person to person, depending on their approach/avoidance disposition. The rewards enjoyed by approach-oriented individuals involve pride in a job well done, further confirmation of their ability to succeed in the future, and useful feedback regarding how to succeed in the future. By contrast, those avoidant-oriented students driven by the fear of failure are more likely to view their successes, when they occur, in terms of being lucky or having succeeded by chance, attributions that do nothing to bolster their self-confidence nor engender pride in their accomplishments. Rather, these emotional rewards are most likely couched in terms of relief, not pride—relief that failure has been avoided one more time. These timid, defensive, and pallid versions of success are a thin foundation on which to base the intrinsic pleasures of learning.

According to this self-worth perspective, then, it is unlikely that rewards *per se*, not even their tangible nor their extrinsic nature, are the cause of diminished task engagement. Rather, the causes more likely concern the high-stakes meaning of grades as conveyors of a sense of worth, combined with their relative scarcity. These realities need to be addressed in any proper discussion of the impact of rewards on caring about learning. Several important points emerge from this perspective when considered in light of our student retrospective data.

Scarcity of Rewards

Doyle's (1983) perspective alerts us to the possibility that it is the way in which rewards are distributed in school—the rules of engagement, so to speak—that causes their negative impact on task engagement, not necessarily the fact that most school incentives are tangible in nature. More specifically, it is the scarcity of valued rewards, due to competitive pressure and

the resulting fear-induced scramble to attain them, that creates student dissatisfaction, withdrawal, and face-saving efforts to deflect the implications for poor performance away from insufficient ability. By this reasoning, intrinsic values become imperiled, not principally because of the tangible, extrinsic features of rewards, but because all too often the individual's sense of worth becomes equated with high marks, which are rendered scarce by competitive rules.

Our college informants were quite emphatic in singling out competition as a major cause of intrinsic disengagement, and especially noteworthy was the fact that they recalled competitive pressures as progressively intensified as they moved through school. Another casualty of competitive pressure was feelings of competency. Regression analyses of our data indicated that feelings of competency, as judged by our informants, made a substantial contribution to variations in the degree to which they valued learning in the early and middle school years—in effect, feeling intellectually equal to a task is closely associated with being task engaged. Given the robustness of this competency/enjoyment linkage, it was troublesome to discover that feelings of competency were remembered as steadily declining from a maximum in the elementary years to a low point in college.

But why should our students recall experiencing increased task engagement as they progressed through school in the face of such collateral deterioration? The answer proved to be simplicity itself: Diminishing feelings of competency and increasing judgments of competitive pressures did not operate alone to affect the propensity for task engagement. According to our informants, other positive, countervailing forces were at work simultaneously. Chief among these were the abundant academic successes enjoyed by this highly selected group of students. Our students confirmed what is well known among both the lay public and the experts alike: Individuals enjoy pursuing those activities at which they do well (Renninger, Hidi, & Krapp, 1992). Conversely, doing poorly (or failing) diminishes one's valuing of an activity and, indeed, may even cause an outright rejection of its importance in an effort to distance oneself from the implications of failure (Birney, Burdick, & Teevan, 1969). Yet, despite the obviousness of these propositions, little, if any, prior research on task engagement has considered the degree to which students were succeeding (or not) in learning the material they were expected to value or enjoy. But such research would seem a critical step for setting limits on the alledgedly negative effects of rewards, a point to be considered in more detail momentarily. Perhaps detrimental effects are limited largely to situations in which students fail to achieve a given standard of performance or actually succeed reasonably well, but are precluded from receiving rewards due to competitive scarcity.

Other positive sources of influence on the growth of task engagement were also reported by our informants. These included progressive

increases over the years in opportunities to exercise freedom of choice in their studies and permission from teachers to act autonomously in pursuit of their interests, opportunities that were recalled to have peaked in the high school years. Variations in these perceived opportunities contributed substantially to the explained variance in intrinsic motivation beyond that already accounted for by subjective feelings of success. These findings reinforce the importance accorded the satisfaction of a need for autonomy by Deci and his colleagues (Deci, Vallerand, Pelletier, & Ryan, 1991; Vallarand, Fortier, & Guay, 1997). Also, another source of need satisfaction featured in our self-report questionnaire and championed by Deci, that of *relatedness*, also proved to be a significant, positive contributor to variations in intrinsic motivation. More specifically, perceptions of peer support increased steadily through time, whereas perceptions of teacher support, although declining somewhat in the middle school years, rebounded to a maximum in high school.

Rewarding Reasons

Although success paves the way for task engagement, success alone does not ensure involvement. The reasons for being successful are critical as well. If one counts success merely in terms of extrinsic benefits, such as the public accolades that accompany success, then the very event of success itself may well compromise task valuing. For example, if we hope to ignite a student's interest in an unfamiliar task, especially in the early stages of learning, by offering tangible rewards for compliance, then compliance is likely all we will get unless additional, personally satisfying reasons for learning are also reinforced at the same time.

What might these payoffs be? In a separate, unpublished study, we ask our college informants to identify those personally meaningful payoffs that cause them to invest more time and energy in assignments beyond the minimum amount of work needed for a good grade. This request provoked a rich and provocative set of responses. They included a considerable representation of what could be called "process" payoffs, that is, satisfactions arising out of the discovery of unexpected yet intriguing subject-matter nuances, feelings of accomplishment for making progress toward a meaningful goal, and an increasing sense of mastery over the material.

Another distinctly different category of valued payoffs included, surprisingly, a number of patently extrinsic rewards, nominally unrelated to the inherent virtues of self-discovery, but which in the school context nonetheless provide potent support in the service of intrinsic valuing. These "social-support" goals included being able to share with others why the material being studied was meaningful to students. These sources of satisfaction

imply provocative possibilities for aligning tangible classroom reward structures in ways that support intrinsic task engagement.

As part of this general inquiry regarding the nature of tangible yet meaningful payoffs and how they might operate to support intrinsic valuing, we ask another group of Berkeley undergraduates to recall a time when they were coaxed, bribed, or otherwise coerced into taking up some new activity that initially commanded little or no interest, but that in time became a great source of personal enjoyment. Every student had at least one such experience to relate. Learning to play the piano was a favorite extracurricular scenario, and foreign language acquisition dominated those scenarios drawn from school settings. Students were directed to describe the process of moving from "chore to joy" as bipolar anchor points along a timeline of their own creation. At five different points in their narratives, say, midway along the timeline, students were directed to rate, retrospectively, the importance of several reasons for their being motivated to continue learning, including among them, being tangibly rewarded by others, feeling a continuing sense of obligation, becoming increasingly skillful, and experiencing an increasing sense of personal control over events. Increasing skillfulness was consistently rated as the most important of these factors across all the narratives, from beginning to end, and irrespective of the nature of the activity undertaken. Incidentally, although the offering of tangible rewards such as promises of increased allowances or the privilege of borrowing the family car commanded a continuing presence over the course of the timelines, variations in the frequency of such incentives were unrelated to subjective judgments of increasing task enjoyment. This finding supports the contention that the offering of tangible incentives may serve a constructive purpose by keeping individuals task-focused until more personally satisfying reasons emerge for continuing. Dynamics such as these, which involve the scaffolding of intrinsically satisfying motives onto initially extrinsic reasons for learning, recall the stagewise progression of motive internalization proposed by Deci and Ryan (1985).

Interests

Finally, current research pays scant attention to the quality of task interest as an independent variable. In particular, much of the experimental research, especially that addressing the overjustification effect, has merely presumed, often without proper empirical verification, that those activities that serve as targets for extrinsic rewards are inherently interesting to all participants. These activities include, among others, pinball play and drawing. Most readers would likely agree that such activities are certainly novel

and at a minimum at least superficially intriguing. However, those qualities of engagement of greatest motivational importance as sustainers of the will to learn joyfully and for prolonged periods are not necessarily captured by mere novelty and certainly not uniformly for all students by one activity. The qualities of engagement to which I refer are deeply held, sometimes idiosyncratic, individualized interests whose presence is powerful enough to overcome rebuff and failure. For all their recreational value, pinball playing and painting are insufficient surrogates for true interests. Moreover, they bear little resemblance to those classroom activities in which it is expected that students should take an interest. What, then, is the impact of rewarding abiding, deeply held interests, using even obviously extrinsic rewards such as praise, social recognition, and monetary prizes? Here, too, we have little systematic evidence to inform an answer.

In summary of these several arguments, I propose, in actuality, that the effects of offering or bestowing tangible rewards, most especially grades, on intrinsic task engagement depend on whether or not students feel successful in their studies; whether or not what they are studying is personally meaningful to them; and whether their prevailing reasons for achieving are task focused, not self-aggrandizing, nor self-protective in response to competitive pressures.

A THOUGHT EXPERIMENT

I conducted a modest thought experiment in order to test whether or not this set of propositions was sufficiently plausible to incorporate into one's thinking about actual curriculum design when intrinsic valuing is a priority goal (Covington, 1999). Some 400 Berkeley undergraduates were asked to imagine themselves starting work on the last assignment in a college course. This hypothetical achievement context was varied along two dimensions: first, whether the subject matter of the course was personally meaningful or not, and, second, whether students had done well or poorly, grade-wise, on all preceding assignments. These two conditions were crossed so that all students rated the degree to which they would likely enjoy and value what they were learning on this final assignment under each of the four possible combinations. Finally, a between-subjects factor was introduced by dividing our students into two groups: those whose dominant reasons for learning were task oriented (approach) and those whose reasons were largely self-protective (avoidant).

The results were revealing. Being previously successful, grade-wise, substantially increased the expectation among students that what they would learn next would be personally valuable compared to a decreased expectation in valuing associated with their being previously unsuccessful. Thus,

far from diminishing valuing, our students believed that being rewarded, grade-wise, would actually increase the likelihood of task enjoyment. Our students' written explanations for this positive linkage between grade satisfaction and engagement were quite compelling. Based on numerous personal anecdotes, students argued, among other things, that being successful stimulates them to study more, and according to their logic, the more one learns, the more interesting the material is likely to become. Such anecdotes should stimulate further inquiries along new lines into the relationship between tangible payoffs and a commitment to learning.

As to the main effect for interest, students estimated that they would enjoy learning more when studying what was already interesting to them than studying what was not especially interesting, irrespective of being either satisfied or disappointed with their grade. Although this finding in itself is scarcely surprising, what was not so obvious was a significant interaction between the success/disappointment condition and interest level, indicating that the appreciation for learning would be far greater in a failed but task-interested cause than when students succeed, grade-wise, but on assignments that held little interest. Another aspect of this interaction effect was also intriguing in that it appeared to limit further the essential holdings of the overjustification argument. Rather than diminishing enthusiasm for an already established interest by being rewarded, even in extrinsic terms (grades), valuing actually increased beyond what would be expected from either being successful alone or being interested alone. Here, too, anecdotal student explanations for this winning combination of grade success/interest were compelling, including the argument that doing well reduces worry about failing so that students are freer to explore what is potentially most interesting to them.

Finally, what was the impact of different reasons for achieving on caring about learning as reflected in the student types? The most important point, pedagogically speaking, is that differences in the expression of subject-matter appreciation between the task-oriented and self-protective groups were modest. Moreover, the dynamics that controlled appreciation were essentially the same for both groups. For example, both groups responded positively to grade success, with task-oriented students only slightly more appreciative of the subject matter. Likewise, both groups were affected adversely by disappointing grades, and self-protective students more so, but again, the differences were only a matter of slight degree. This suggests that all students—at least when they are identified in terms of approach/avoidance dimensions, possess a capacity for intrinsic engagement, irrespective of the degree to which they have been driven by the fear of failure.

Perhaps the most intriguing implication of this study concerns the potential intrinsic benefits of being successful, grade-wise. Why should this be, given concerns over the potentially detrimental effects of such rewards?

Several interlocking explanations are worthy of consideration. For one thing, success conveys a message of competence. And, as we were reminded, individuals tend to like and enjoy doing things at which they excel. For another thing, as noted by our informants, success mediates a willingness to learn more, which in turn leads to further discoveries of personal value. Finally, as pointed out by Urdan (personal communication, 2002), feelings of success may become an inherent property of work itself, such that enjoyment becomes a measure of success (e.g., "I felt successful because I really enjoyed the activity"). Naturally, all these considerations need to be tempered by the larger motivational perspective. The degree of intrinsic valuing associated with being successful, grade-wise, ultimately depends on the reasons for learning so that, for example, those successes achieved as a means to avoid failure will do little to engender enjoyment in one's accomplishments.

TASK ENGAGEMENT IN DECLINE: THE COLLEGE YEARS

Now consider the precipitous drop in the frequency of intrinsically satisfying experiences reported by our informants upon their entry into college—precipitous in that these ratings slipped sharply and suddenly from their pinnacle in high school. The reactions of our informants to this unwelcome void were potentially destructive of the valuing of whatever might be learned in college. For some students, we detected a sense of resignation and defeat regarding the prospects of their ever appreciating what they would be learning in college. Other students alleged a cynicism on the part of the university, which, while officially honoring the pursuit of knowledge, in practice, they argued, encourages merely the pursuit of grades. And among yet other students, we detected a deliberate decision to postpone the pursuit of personal academic interests and intellectual enjoyment until after the joyless gauntlet of the college years has ended, a most unlikely possibility.

One explanation for this decline in intrinsic experiences followed from our need-based analysis. Simply put, intrinsic engagement as a value was whipsawed, on the one side, by the persistent and accelerated presence of factors that undercut task engagement, and, on the other side, by a decreasing presence of those positive, countervailing factors that had set intrinsic engagement on a sustained, upward course in earlier years. As to those constructive factors reported to be in eclipse, we found a decline in the frequency with which students felt they were achieving their grade goals compared to their recollections of virtually uninterrupted academic successes in high school. This sense of decline can be attributed largely to the fact that this intellectually accomplished group, which competed with

disproportional success against other less well-prepared students from the general population in precollege years, must continue to compete, but now within an elite circle and for an even more limited supply of rewards. Correlatively, the presence of factors disruptive of the achievement cycle were reported to be on the rise, creating a progressive overbalancing of factors in a negative direction. Not surprisingly, students perceived their new achievement climate as far more competitive than they did in the high school years, and inevitably, doubtless in a cascading effect, they also rated their competence at the lowest ebb compared to any point in their precollege years. Moreover, at the very moment of considerable self-doubt, our students experienced an increasing need to prove themselves by trying to outperform others. This situation approaches the cruelest of ironies: Students believe themselves to possess to a decreasing degree the very quality of mind, ability, that becomes increasingly critical in their test of their self-worth, that is, doing better than others.

This analysis allows us, once again, to place in perspective the question of the potential impact of tangible rewards on intrinsic task engagement. The culprit is primarily a scarcity of rewards, not necessarily their extrinsic nature. It appears to us that scarcity drives a number of negative dynamics, including the disruption of satisfying the need for belonging: Competition creates contestants, not colleagues; moreover, scarcity exacerbates fears of incompetency at a time, ironically, when students are being increasingly offered potentially self-affirming opportunities for autonomous, independent exploration and discovery.

Despite this daunting confection of selective sorting in the college years, of the massive presence of coercive, extrinsic inducements and an overweening grade focus, our students continued to value learning. What was missing for them, as reflected by their declining ratings, was a lack of opportunity to savor the personal, social, and intellectual implications of what they were learning, not necessarily a lack of willingness to do so. Indeed, they expressed considerable regret at the choices they often felt forced to make in favor of focusing on what they believed would be tested in class versus attending to the personal meaning of what they were studying. I believe this observation is enormously important to our understanding of the true nature of the relationship between performing for the sake of grades and caring about learning. Although our students reported themselves in considerable conflict over these goals, the feelings evoked were not necessarily those associated with goal incompatibility—between achievement and caring—as much as with the need to prioritize these goals. From this perspective, our task as educators should be to help students redress these priorities in favor of caring about learning. Potentially, this task is made easier for the fact that the promotion of effective learning and its appreciation go hand-in-hand. A review of our student essays makes

clear that they see successful achievement, with its material benefits such as being the gateway to prestigious occupations, and valuing what is being learned as two sides of the same coin. Recall, for example, the observations of many of our students that being successful prompted them to study more, and the more they learned, the more likely they were to discover things of interest. And additionally, being successful reduces worries about failing so that, according to our informants, they are freer to explore what is of potential interest. Nonetheless, despite such anecdotal reassurances, the task of modifying priorities is no simple proposition.

CONCLUSION

Based on the reasoning thus far, I have concluded that the threat to intrinsic task engagement posed by the offering of rewards, especially in the form of grades, has less to do with the extrinsic nature of such rewards than the fact that many students tie their sense of worth to their ability to compete successfully for a limited number of payoffs so that these rewards become sought after for self-defeating, defensive reasons, which undercut the love of learning. Assuming that this argument properly assesses the real issues associated with the potentially undermining effects of school-based rewards, we can rephrase the questions with which we began in a more proactive form by asking under what conditions might the offering of rewards—even blatantly tangible rewards, like grades—benefit creative expression and in the very competitive context in which grades often carry the burden of self-definition. The previous reasoning offers a starting point for these deliberations. I believe that we will not satisfactorily resolve the issue of using rewards as a motivational tool until the research community takes into account more fully (a) the psychological meaning that rewards convey, (b) the reasons that students seek out these rewards in the first place, and (c) the developmental needs that rewards can potentially satisfy. Consider the negative side of this proposition: When classroom reward structures encourage self-defeating, defensive reasons for learning, as in the case of outperforming others, then the basic psychological needs associated with the will to learn identified by Deci and his colleagues will be stifled. Self-confidence will falter needlessly when perfectly competent performances are undervalued due to competitive pressure; relatedness needs will be undercut when competition turns colleagues into competitors; and needs for personal control, autonomy, and freedom of expression will be overwhelmed by the fear of failure. By contrast, on the optimistic side of the ledger, I suggest that all students, even those who are self-protective by inclination, can behave with considerable enthusiasm despite a competitive, grade-focused context if (a) rewards are potentially plentiful,

that is, available to anyone as long as their performances live up to the quantity and quality of workmanship required by an instructor; (b) a number of different kinds of rewards are available in addition to those associated with performance outcomes, especially payoffs that reinforce students in the pursuit of their own goals and unique interests; and (c) rewards encourage autonomy of expression and independence of thought in a cooperative context.

But how can practitioners incorporate these principles into school learning? Here we can take inspiration from the retelling by my students of the story of the old deaf professor in ways that make positive use of rewards in the service of task enjoyment. An important point made by these storytellers was to maintain a distinction between rewards for performance versus rewards for the process by which achievements occur. Many students argued, in effect, that the old man's money should be offered to enhance greater enjoyment in game play, not just to establish winners and losers. Their suggestions included the purchase of athletic equipment so that higher skill levels could be attained than otherwise, and rewarding compliance with rules of play that fully engaged all the children, with none left out. Such payoffs are reminiscent of those uniquely personal, idiosyncratic rewards mentioned earlier, which are potentially plentiful, and are also supportive of autonomous or collective action. Indeed, perhaps one reason that rewards have received such bad press is that the target behaviors typically are performance outcomes whose quality is often defined in reward-scarce, competitive terms. What if, by contrast, payoffs encourage the personal discoveries, insights, and challenges inherent in the process of achievement, processes that are open to all students?

One potential problem with this proposal is obvious. There is the possibility that process rewards may lose their motivational value simply because they *are* plentiful. In effect, who wants to play if everyone can win? Fortunately, we have some reassurances on this point. Another sample of our students identified at least one measure of excellence that, by their reckoning, maintains its motivational value while reflecting a dimension along which anyone can excel: self-improvement. Nonetheless, paying students to arrange their learning in ways that promote personal meaning is a risky proposition—what if, in the process of also satisfying student grade aspirations, we undercut the very essence of our higher objectives?

We have addressed this question empirically in an introductory psychology course, that I teach yearly with a typical enrollment of some 400 students. Over the past several years, I have allocated a small percentage of the total points students can earn toward their final grade to the seeking of personal relevance in their assignments. This involves, for instance, encouraging students to modify otherwise uninteresting tasks in order to increase their attractiveness for challenge and exploration; to seek out

deeper connections that might link assignments not only in my course, but across courses; and to reflect on their own thought processes as they work, remaining alert to serendipity, chance, and the opportunity for expanded exploration. Students are uniformly positive about this feature of the course, not simply because it presents a novel yet virtually foolproof way to enhance their grades, but—and this is the important point—also because the process-related experiences brought to light are precisely the kinds of intangibles that students feel are typically missing when instructors calculate grades. These rewards take on a disproportionate importance, far beyond their modest contribution to the final grade tally, by elevating intrinsic task engagement to a favored instructional priority.

It appears that attending to the intrinsic aspects of learning via a grade inducement holds considerable promise. On the one hand, our informants conceded that without this tangible payoff, little attention would have been given to the rich personal satisfactions associated with their learning. Yet on the other hand, once our students became engaged, the fact of their having been paid initially was generally discounted as being a distraction.

These findings stimulate further inquiries. For instance, we may still wonder how genuine are such self-induced revelations, and if robust and enduring, are they sustained merely by material success or correspondingly diminished by disappointing grades? In short, just how much do expressions of task engagement remain the creatures of extrinsically controlled rewards, once they are induced? It is by pursuing questions such as these that presume a potentially positive motivational role for tangible rewards that will most likely settle the issues raised here in constructive ways.

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